

## What is Claimed is:

- [c1] A mounting system for a pellicle comprising:
  - a mounting structure for coupling a pellicle to a mask, wherein a sealed interior portion is formed between the pellicle, the mask and the mounting structure; and
  - a port on the mounting structure through which a pressure difference can be created between the interior portion and an exterior environment.
- [c2] The mounting system of claim 1, further comprising a pressure regulator in communication with the port to control a pressure in the interior portion.
- [c3] The mounting system of claim 2, further comprising a source of high pressure gas coupled to the pressure regulator, and a source of low pressure gas coupled to the pressure regulator.
- [c4] The mounting system of claim 3, wherein one of the sources of pressure gas is the exterior environment.
- [c5] The mounting system of claim 2, further comprising a pressure sensor operatively coupled to the pressure regulator for detecting a pressure of the interior portion.
- [c6] The mounting system of claim 2, further comprising a position sensor operatively coupled to the pressure regulator to determine the position of the pellicle;
  - wherein the pressure difference is controlled by the pressure regulator to maintain a flat surface on the pellicle based on a reading from the position sensor.
- [c7] The mounting system of claim 2, further comprising a velocity sensor operatively coupled to the pressure regulator to determine the velocity of the pellicle;
  - wherein the pressure difference is controlled by the pressure regulator to maintain a flat surface on the pellicle based on a reading from the velocity sensor.

- [c8] The mounting system of claim 1, further comprising a calibrated leak from the interior portion to the exterior environment.
- [c9] The mounting system of claim 1, further comprising means for controlling the pressure difference to maintain a flat surface on the pellicle.
- [c10] The mounting system of claim 1, further comprising a position sensor to determine the position of the pellicle.
- [c11] The mounting system of claim 1, further comprising an aerodynamic fairing adjacent the mounting structure.
- [c12] A pellicle mounting system for a mask, the mounting system comprising:  
an aerodynamic fairing adjacent the mask, the fairing having a taper to reduce aerodynamic drag on the pellicle.
- [c13] The mounting system of claim 12, further comprising:  
a mounting structure for coupling the pellicle to the mask, wherein a sealed interior portion is formed between the pellicle, the mask and the mounting structure; and  
a port on the mounting structure through which a pressure difference can be created between the interior portion and an exterior environment.
- [c14] The mounting system of claim 13, further comprising:  
a pressure regulator to adjust a pressure in the interior portion;  
a source of high pressure gas coupled to the pressure regulator; and  
a source of low pressure gas coupled to the pressure regulator.
- [c15] The mounting system of claim 14, further comprising a position sensor operatively coupled to the pressure regulator to determine the position of the pellicle;  
wherein the pressure difference is controlled by the pressure regulator to maintain a flat surface on the pellicle based on a reading from the position sensor.
- [c16] The mounting system of claim 14, further comprising a velocity sensor operatively coupled to the pressure regulator to determine the velocity of the

pellicle;

wherein the pressure difference is controlled by the pressure regulator to maintain a flat surface on the pellicle based on a reading from the velocity sensor.

[c17] The mounting system of claim 13, further comprising means for controlling the pressure difference to maintain a flat surface on the pellicle.

[c18] A method of reducing distortion of a pellicle for a mask, the method comprising the steps of:

sealing the pellicle to the mask using an airtight mounting structure such that an interior portion is created between the pellicle, the mask and the mounting structure; and  
regulating a pressure in the interior portion to maintain a flat surface on the pellicle.

[c19] The method of claim 18, further comprising the step of providing an aerodynamic fairing adjacent the mask to reduce turbulent airflow across the pellicle.

[c20] The method of claim 18, wherein the pressure is regulated according to feedback from at least one of a pressure sensor coupled to the interior portion, a position sensor for the pellicle, and a velocity sensor for the pellicle.